

ASCIDAE ASSOCIATED WITH THE NASAL CAVITIES OF
MEXICAN BIRDS (ACARINA: MESOSTIGMATA)¹

K. E. Hyland, A. Fain and A. S. Moorhouse

Abstract.—Mites of the family Ascidae taken from the nasal passages of birds, mostly hummingbirds (Trochilidae) in Veracruz, Mexico, are represented by the genera *Proctolaelaps* and *Rhinoseius*. *P. kirmsei*, *P. belemensis* and *R. heliconiae* are new to Mexico. Three new species are described: *P. mexicanus* from *Euphonia hirundinacea*, *P. spiralis* from *Phaethornis superciliosus*, and *R. mathewsoni* from *Amazilia candida*.

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Introduction

Fain, Hyland and Aitken (1977a, 1977b) have pointed out the diversity of the mites placed in the family Ascidae which have been recovered from the nasal passages of birds in the New World. They described species from three genera, *Rhinoseius*, *Proctolaelaps* and *Lasioseius*, and gave a key to the known species.

In the present work, we continue the series begun earlier on the mites from Mexican birds (Hyland and Moorhouse, 1970; Fain and Hyland, 1970) and we report on the family Ascidae collected during the month of August, 1963. Although we recognize that these mites exhibit a phoretic relationship with their host, and not a parasitic one, we consider it appropriate to treat them in this series because they were collected in the same habitat. In our earlier work (Hyland and Moorhouse, 1970) we described the collecting area, and the conditions under which the hosts and the acarines were taken.

In the descriptions which follow, all measurements are in micrometers (μm). Holotypes and allotypes will be deposited in the acarological collection of the U.S. National Museum of Natural History, Washington, D.C. Paratypes are in authors' collections at the Institut de Médecine Tropicale, Antwerp, Belgium, and the Department of Zoology, University of Rhode Island. All specimens were taken in Veracruz by R. W. Dickerman.

The common name of each host is given the first time the host is mentioned.

Proctolaelaps mexicanus n. sp.

This species can be separated from all other species of the genus found phoretically associated with birds by the presence of certain setae with expanded (bulbous) tips as follows: Z 5, posterior opisthogasteral, postanal, and setae on the femora of all legs. In addition, the genital plate of the female possesses an anteromedian area which appears to be sclerotized.

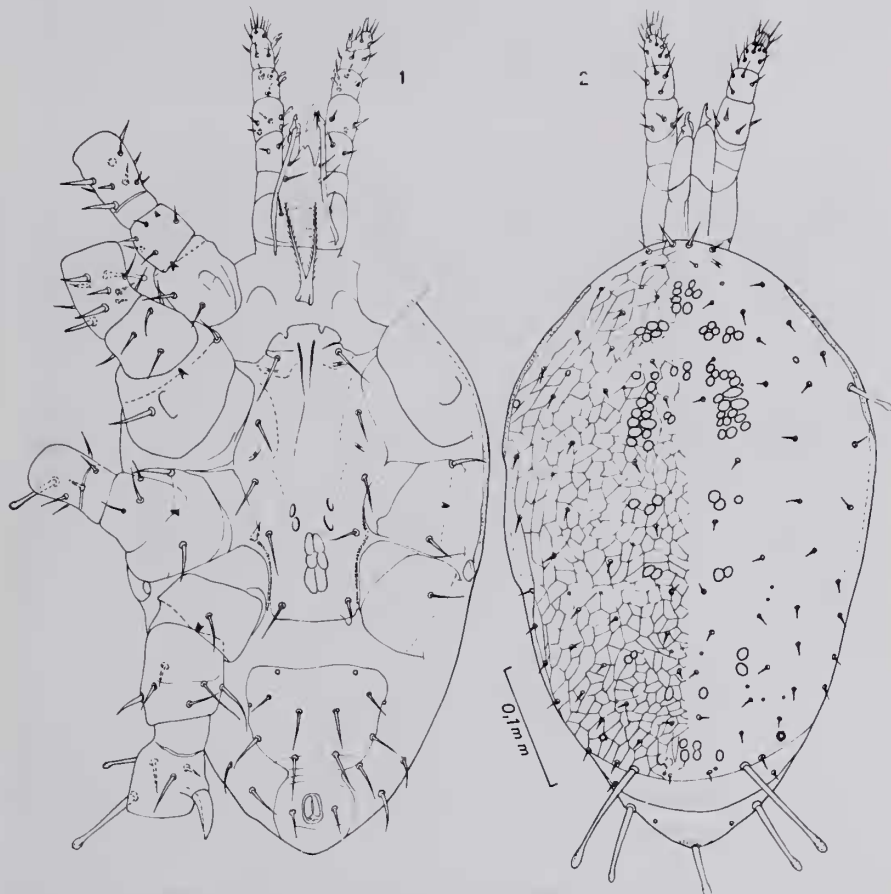


Fig. 1-2. *Proctolaelaps mexicanus* sp. n. Holotype male. 1. Ventrally; 2. Dorsally.

Male.—(Holotype) (Figs. 1, 2). Idiosoma 478 μm long, 291 μm maximum width. Dorsum: Anterior part of dorsal plate possesses 22 pairs of setae (6 pairs of *j*, 6 pairs of *z*, 6 pairs of *s* and 4 pairs of *r*) of which the *r* 3 or humeral is long (39 μm) and with an expanded tip, and *j* 1 is 21 μm long; posterior portion of plate with 20 pairs of short setae except for Z 5 which is 94 μm long and has an expanded tip. Venter: Sternal plate separated from ventrianal plate. The latter has a distinct pattern and bears 5 pairs of ventral setae in addition to the 3 anal setae. Postanal seta 42 μm long and with expanded tip. Gnathosoma: Spermadactyl slender and long (101 μm) with curved tip. Legs: All femora with a dorsal seta with expanded tip. Leg I with short conical spine on trochanter and femur. Leg II with short conical spines on genu (1), tibia (1) and tarsus (4). Femur IV with a very strong ventral spine which is partly fused to integument at its base. Both tarsi IV have been broken off.

Female.—(Allotype) (Figs. 3, 4, 5). Idiosoma 577 μm long, 359 μm wide. Dorsum: Anterior part of dorsal plate with 22 pairs of setae (6 pairs of *j*, 6 pairs of *z*, 6 pairs of *s*

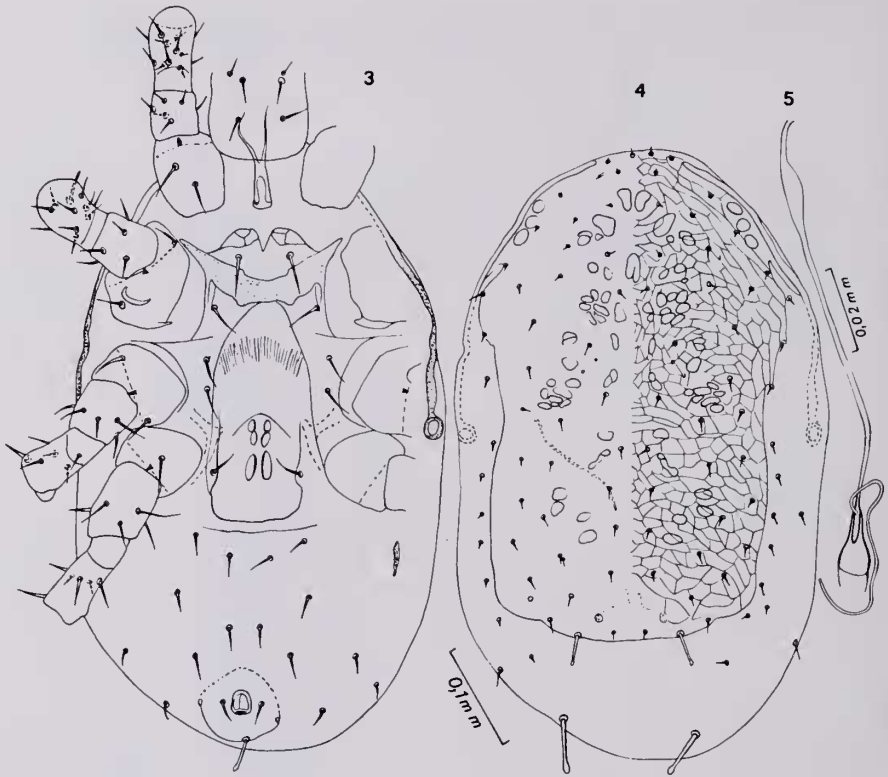


Fig. 3-5. *Proctolaelaps mexicanus* sp. n. Allotype female. 3. Ventrally; 4. Dorsally; 5. Inseminating apparatus.

and 4 pairs of *r*), posterior part with 15 pairs (5 of *J*, *Z* and *S* each). All setae are small, with a maximum length of 13 μm , except for *Z* 5 which is 31 μm long and possesses an expanded tip. Distance between anterior tips of the peritremes 86 μm . Venter: Sternal shield with anterior lobes containing a network of striations; an ill-defined thicker band (stippled in Fig. 3) runs horizontally across the center of the plate; distance between anterior pair of setae 39 μm long and distance between their bases 52 μm . Genital plate truncate posteriorly with setae off the plate, anterior tongue moderately elongate and with a median longitudinal sclerotized area as illustrated. Anal plate 28 μm long, 18 μm wide. Postanal seta with inflated tip. Ten pairs of opisthogastical setae, the postmedian pair being well developed (49 μm long) and with expanded tips. Maturation pouch of inseminating apparatus membranous, the spermiduct joins at the distal end of this pouch and the adductor canal is long and only slightly enlarged distally. Gnathosoma: Tectum denticulate as in *P. hunteri*. Legs: Each femur possesses distally on its dorsal surface a seta with an expanded tip.

Host and locality.—Holotype male, allotype female, 16 paratype females and one nymph were taken from the nasal cavities of a single specimen of Bonaparte's euphonia, *Euphonia hirundinacea* Bonaparte, 1838 (family Thraupidae) in Veracruz, Mexico, 23 Aug. 1963, host M63-08-23-10/2040, R. Dickerman, coll.

Since this host is not a trochilid the question has arisen concerning the authenticity of our collection data. Norgaard-Olesen (1973/74) and Van Boeckstaele (1977) have indicated that the diet of many tanagers consists of a significant quantity of flowers and nectar, so it seems likely that this host legitimately acquired these acarines.

Proctolaelaps spiralis n. sp.

This species is close to *P. belemensis belemensis* Fain, Hyland and Aitken, 1977, and *P. b. cyanocompsae* Fain, Hyland and Aitken, 1977, in having the genital plate prolonged anteriorly, seta *j* 1 unusually long and the 5th and 6th rows of deutosternal teeth more expanded. It can be separated from females of both these subspecies by the spiral shape of the inseminating apparatus and decrease in the number of setae on both anterior and posterior portions of the dorsal plate (19 and 14 respectively compared with 23 and 18 for both subspecies).

Female.—(Holotype) (Figs. 6, 7, 8). Idiosoma 624 μm long, 390 μm wide. Dorsum: Shield not incised but slightly constricted toward the middle; anterior half of plate bears 19 pairs of setae of which *j* 1 is 23 μm long and *z* 6 is 42 μm ; posterior portion with 14 setae of which *Z* 5 is 55 μm long, only 3 of *S* series remain on the plate, and none of the *R* series occur on the plate. Distance between anterior tips of peritremes is 49 μm . Venter: Sternal shield evenly sclerotized with distinctive pattern consisting of 3 pairs of median scales and with small anterior lobes. All sternal setae located on plate, anterior pair 31 μm long and their bases 65 μm apart. Genital plate truncate with anterior projection attenuated as in *P. belemensis cyanocompsae*; genital setae on the plate. Anal plate 96 μm long, 86 μm wide, with anus located toward the anterior end; postanal seta 52 μm long. Opisthogastereal setae nearly equal in size (34 μm) except for posterior median pair which are 60 μm long. Inseminating apparatus with a long, thin, aductor canal which is enlarged slightly toward the distal end and possesses a membranous maturation pouch which is spiral shaped. Gnathosoma: Tectum broad and finely denticulate anteriorly. Chelicerae 129 μm long. Legs: All leg setae of usual size, coxa I without denticles, and posterior seta on coxa II is not spinous.

Host and locality.—Holotype female and 5 paratype females were collected from the long-tailed hermit, *Phaethornis superciliosus* (Linnaeus, 1766), in Veracruz, Mexico, 13 Aug. 1963, host M63-08-23-12/2022, R. Dickerman, coll.

Proctolaelaps kirmsei Fain, Hyland and Aitken, 1977

This species was described from *Phaethornis augusti* Bourcier, 1847, collected in Venezuela. We have now encountered a single female specimen in the nasal cavity of *Phaethornis superciliosus* from Veracruz, collected 26 Aug. 1963, host M63-08-26-4/2078, by R. Dickerman.

This female agrees very closely with the type with respect to the length of setae *j* 6, *s* 5, *J* 1 and *Z* 5. The anterior pair of sternal setae are 29 μm apart compared with 21 μm but this difference is within the range exhibited by the paratypes. The inseminating apparatus agrees closely.

Proctolaelaps belemensis Fain, Hyland and Aitken, 1977

This species was described from Brazil where it was taken in association with *Threnetes leucurus* (Linnaeus, 1766) and from several other hosts including *Phaethornis superciliosus*. We have three representatives in the Mexican collection, one female from *Phaethornis superciliosus* collected 26 Aug. 1963, host M63-08-26-4/2078, by R. Dickerman.

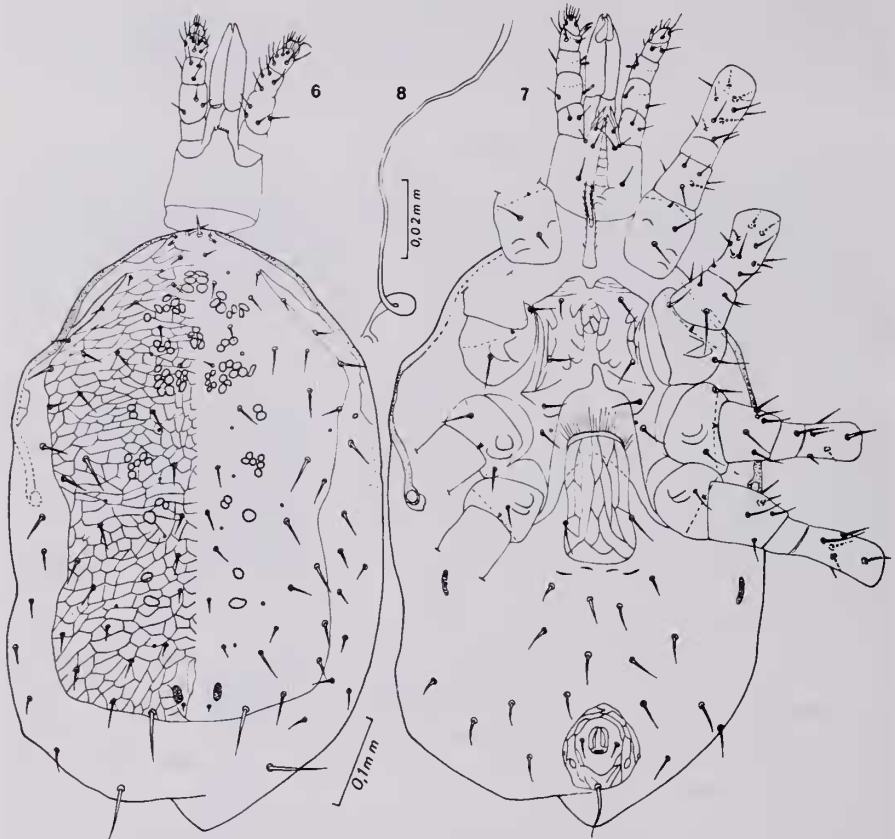


Fig. 6-8. *Proctolaelaps spiralis* sp. n. Holotype female. 6. Dorsally; 7. Ventrally; 8. Inseminating apparatus.

man. The remaining two are from the violet sabre-wing. *Campylopterus hemileucornis*, collected 27 Aug. 1963, host M63-08-27-4/2098, by R. Dickerman.

Rhinoseius mathewsoni n. sp.

This species is near to both *R. heliconiae* Baker & Yunker and *R. phaethornis* Fain, Hyland and Aitken. The males can be separated from *R. heliconiae* by the presence of long *s* 3 and *s* 4 and *S* 1 to *S* 5 setae on the dorsum and from *R. phaethornis* by the presence of extremely small posterior opisthogasteral setae and the enlarged *S* setae. The female can be separated from *R. heliconiae* by the presence of seta *Z* 5 and from *R. phaethornis* by the nearly absent cuticular network on the dorsal shield, the smaller opisthogasteral setae, especially the posterior median pair and the more oval shape of the anal plate.

Male.—(Holotype) (Figs. 9, 10). Idiosoma 504 μm long, 338 μm maximum width. Dorsum: Shield with deep lateral incision and a line extending through the plate. Setae

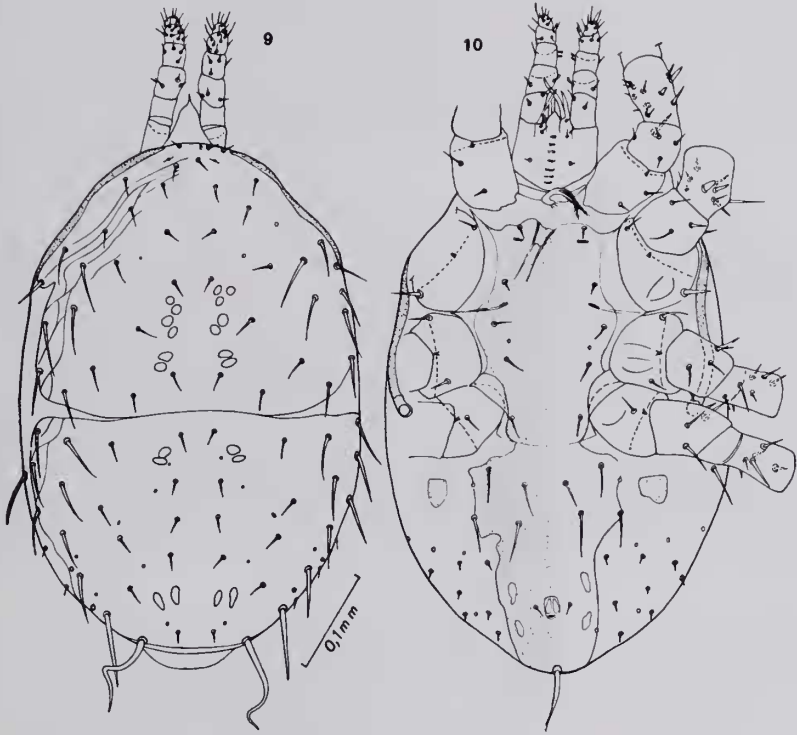


Fig. 9–10. *Rhinoseius matthewsoni* sp. n. Holotype male. 9. Dorsally; 10. Ventrally.

variable in length: $j\ 1$ and $z\ 1$ small and nearly of equal length ($10\ \mu\text{m}$), $z\ 3$ is lacking, $s\ 3$ and $s\ 4$ approximately 3 times longer (41 and $47\ \mu\text{m}$) than those of j and z rows; $Z\ 5$ twisted, approximately $110\ \mu\text{m}$ long; $S\ 1$ to $S\ 5$ well developed, 44 to $68\ \mu\text{m}$ in length. Peritremes $65\ \mu\text{m}$ apart at their anterior tips. Pattern on dorsal shield poorly developed and confined to the periphery of the anterior half of plate. Venter: Tritosternum normal. Ventroanal plate contiguous but not fused with sternogenital plate, and bears 4 pairs of ventral setae plus the 3 anals. All 9 pairs of posterior opisthogasteral setae small, at most $8\ \mu\text{m}$ long. Gnathosoma: Tectum arched and tapering to a point. Spermadactyl $44\ \mu\text{m}$ long with small hook at tip. Legs: Blunt, cylindro-conical setae present as follows: Femur I (1), Genu (1), Femur II (1), Genu II (1), Tibia II (1), Tarsus II (4), Tarsus III (1). Other setae on leg segments frequently long, including those on tibiae III and IV some of which are longer than their respective leg segments.

Female.—(Allotype) (Figs. 11, 12, 13). Idiosoma $510\ \mu\text{m}$ long, $328\ \mu\text{m}$ wide. Dorsum: Setae generally uniform in shape and length ($16\ \mu\text{m}$) except that $j\ 1$ and $z\ 1$ are minute ($3\ \mu\text{m}$); $z\ 3$ is wanting, and $z\ 5$ is small ($10\ \mu\text{m}$). Shield deeply incised, lacks cuticular pattern except on the border. Anterior tips of the peritremes $39\ \mu\text{m}$ apart. Venter: Tritosternum $91\ \mu\text{m}$ long, base $39\ \mu\text{m}$. Sternal plate without well defined pattern; anteriorly prolonged into two lobes which bear a few striae. Distance between anterior pair of setae is $60\ \mu\text{m}$. Third pair of setae in posterior lateral angles of plate. Remaining pair of setae located off the plate. Genital plate rounded both posteriorly

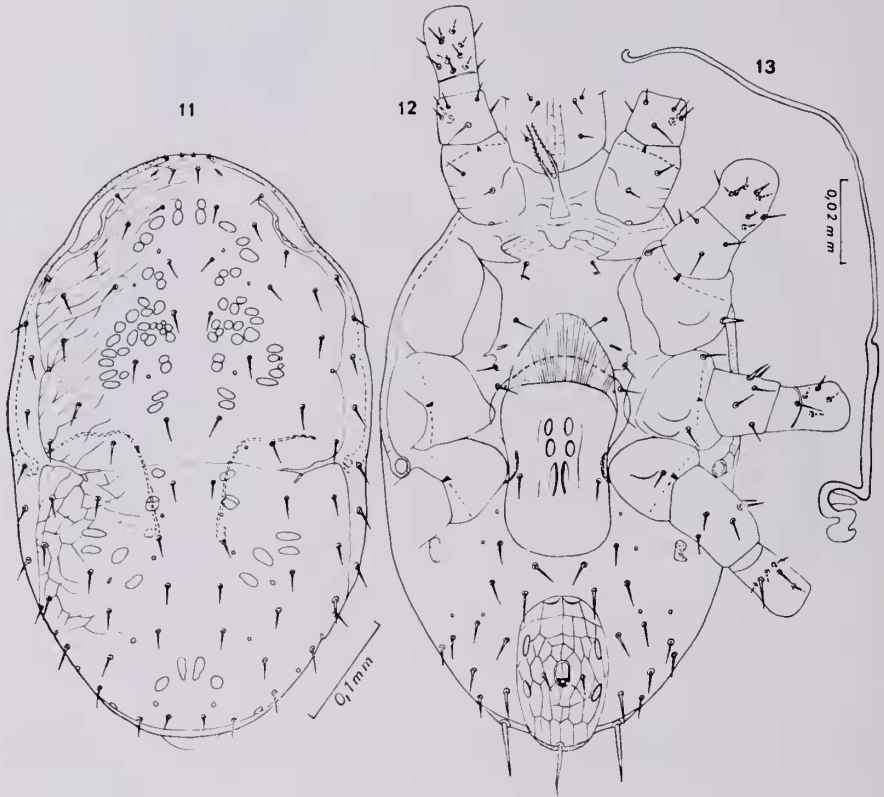


Fig. 11–13. *Rhinosecius mathewsoni* sp. n. Allotype female. 11. Dorsally; 12. Ventrally; 13. Inseminating apparatus.

and anteriorly; anterior tip extends beyond level of sternal setae II. Anal plate elliptical, $83\ \mu\text{m}$ wide, $138\ \mu\text{m}$ long. Anus located in middle of plate. Adanal setae smaller than adjacent opisthogaster setae. Postanal seta $42\ \mu\text{m}$ long. Setae on opisthogaster comprise 10 pairs; median pair $49\ \mu\text{m}$ long, at least twice as long as other pairs. Posterior portion of inseminating apparatus "L" shaped; longitudinal part $39\text{--}44\ \mu\text{m}$ long in holotype. Gnathosoma: Tectum tapering to a point; deutosternal teeth indistinct on allotype but on paratype consists of the usual seven rows. Legs: Posterior seta on coxa II spine-like, $18\ \mu\text{m}$ long. All setae shorter than their respective leg segments.

Remarks.—This species is dedicated to our friend and colleague, Professor John Angell Mathewson, on the occasion of his retirement from the Department of Zoology at the University of Rhode Island.

Types.—Holotype male, allotype female and 7 paratype females from the nasal cavity of the white-bellied emerald, *Amazilia candida* (Bourcier & Mulsant, 1846), taken in Veracruz, Mexico, 17 Aug. 1963, host M63-08-17-12/1497; R. Dickerman, coll.

Additional paratypes from *Amazilia candida* as follows: 1 male, 7 females from host

M63-08-13-8/1490, 13 Aug. 1963; 10 females from host M63-08-24-1/2048, 24 Aug. 1963; 1 female from host M63-08-17-9/1494, 17 Aug. 1963. Other paratypes from the rufus-tailed hummingbird, *Amazilia tzacatl* (de la Llave, 1883) as follows: 4 females from host M63-08-13-7/1488, 13 Aug. 1963; 1 female from host M63-08-13-6/1489, 13 Aug. 1963. Also paratypes from *Phaethornis superciliosus* as follows: 7 females from host M63-08-25-4/2078, 26 Aug. 1963; 5 females from host M63-08-23-12/2022, 23 Aug. 1963.

Rhinoseius heliconiae Baker & Yunker, 1963

This species is well represented in this collection. Although the holotype was taken from *Heliconia* cuttings of unknown origin at New York, additional specimens were recovered from the nasal passages of *Phaethornis yaruqui* (Bourcier) from Rio Raposo in Colombia, and were considered conspecific by Baker and Yunker.

Our material agrees well with the description and with the types with one exception: the median pair of posterior opisthogasteral setae measure 78 to 81 μm in length (this includes a second specimen on the same slide with the holotype). In our material these same setae vary in length from 29 to 57 μm .

Our collection includes the following: From *Amazilia candida*, 7 females, 1 male from host M63-08-24-1/2048, 24 Aug. 1963; 4 females, 1 male from host M63-08-13-8/1490, 13 Aug. 1963. From *Phaethornis superciliosus*, 2 females from host M63-08-23-12/2022, 23 Aug. 1963. One female from host M63-08-26-4/2078, 26 Aug. 1963.

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(KEH) Department of Zoology, University of Rhode Island, Kingston, RI 02881; (AF) Institut de Médecine Tropicale Prince Léopold, Nationalestraat 155, B-2000 Antwerpen, Belgium; and (ASM) United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services, 424 Trapelo Rd., Waltham, MA 02154.

Footnote

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